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Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of transmitting optical signals in an optical communication system, comprising:

receiving an [[optical]] input signal that has a first data rate;

splitting the [[optical]] input signal into a plurality of sub signals which carry different split portions of information carried in the input signal;

using the sub signals to control a plurality of tunable optical transmitters to produce a plurality of optical signals of different sub-wavelengths that carry the different split portions of the information, respectively, wherein the plurality of sub-wavelengths are spaced sufficiently close in wavelength to provide a spectral efficiency of all the sub-wavelengths of the plurality of sub-wavelengths that is close to or greater than a spectral efficiency of the optical input; and

combining the plurality of the optical signals of different sub-wavelengths into a single fiber to transmit to a destination.

- 2. (Currently Amended) The method of claim 1, wherein a total bandwidth occupied by the sub-wavelengths is within a same ITU window of the optical input.
- 3. (Currently Amended) The method of claim 2, wherein the total bandwidth occupied by the sub-wavelengths is less than a bandwidth occupied by the [[optical]] input signal.

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4. (Currently Amended) The method of claim 2, wherein the total bandwidth occupied by the sub-wavelengths is 5 times or less than a bandwidth occupied by the [[optical]] input signal.

Claims 5-8: Canceled.

9. (Currently Amended) The method of claim 1, wherein a plurality of optical transmitters are provided to produce the plurality of oub wavelengths, each of an optical transmitter including further comprising using a wavelength locker to control a corresponding optical transmitter against a drift in wavelength.

Claims 10-16: Canceled.

- 17. (Currently amended) The method of claim 1 [[16]], wherein a number of sub-wavelengths is in the range of 4 to 32.
- 18. (Original) The method of claim 1, wherein the first data rate is 10 Gb/sec or more.
- 19. (Original) The method of claim 1, wherein a subwavelength data rate of each subwavelength 50 Gb/s or less, and spacing of the sub-wavelengths is 25 GHz or less.
- 20. (Original) The method of claim 1, wherein a subwavelength data rate of each subwavelength is 10 Gb/s or less, and spacing of the subwavelengths is in the range of 5 to about 25 GHz.

Applicant : Winston I. Way Attorney's Docket No.: 14723-007001

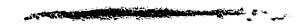
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-21. (Original) The method of claim 1, wherein a subwavelength data rate of each subwavelength is 10 Gb/s or less, and spacing of the subwavelengths is in the range of to about 6 to 25 GHz.

- 22. (Original) The method of claim 1, wherein a subwavelength data rate of each subwavelength is 2.5 Gb/s or less, and spacing of the subwavelengths is in the range of to about 3 to 12.5 GHz.
- 23. (Currently amended) The method of claim 1, wherein a number of subwavelengths is 2 and a sub-wavelength spaceing spacing is in the range of 20 to about 100 GHz.
- 24. (Currently amended) The method of claim 1, wherein a number of subwavelengths is 8 and a sub-wavelength epaceing spacing is in the range of 5 to about 25 GHz.
- 25. (Currently amended) The method of claim 1, wherein a number of subwavelengths is 4 and a sub-wavelength epaceing spacing is in the range of 6 to about 25 GHz.
- 26. (Currently amended) The method of claim 1, wherein a number of subwavelengths is 16 and a sub-wavelength spaceing spacing is in the range of 3 to about 12.5 GHz.
- 27. (Currently amended) The method of claim 1, wherein a number of subwavelengths is 4 and a sub-wavelength spaceing spacing is in the range of 3 to about 12.5 GHz.

Claims 28-51: Canceled.

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52. (New) The method of claim 1, further comprising:

receiving the plurality of the optical signals of different sub-wavelengths from the single fiber at the destination;

splitting the received plurality of the optical signals of different sub-wavelengths into separate optical signals at the different sub-wavelengths;

using different optical receivers to receive the separated optical signals at the different sub-wavelengths, respectively, and to produce electrical output signals representing the separated optical signals, respectively; and

combining the electrical output signals into an output signal at the first data rate.

- 53. (New) The method of claim 52, wherein the optical receivers are tunable in wavelength.
 - 54. (New) A communication system, comprising:

a signal demultiplexer to separate an input signal at a high date rate into a plurality of signals each at a low data rate, wherein the plurality of signals carry different split portions of information carried in the input signal;

a plurality of tunable optical transmitters, respectively controlled by the plurality of signals, to produce a plurality of optical signals of different sub-wavelengths that carry the different split portions of the information, respectively, wherein the plurality of sub-wavelengths are spaced sufficiently close in wavelength to provide a spectral efficiency of all the sub-wavelengths of the plurality of sub-wavelengths that is close to or greater than a spectral efficiency of the optical input;

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a plurality of wave lockers respectively coupled to the tunable optical transmitters, each wave locker controlling a corresponding tunable optical transmitter against a drift in wavelength in the tunable optical transmitter; and

an optical element to couple the plurality of the optical signals of different sub-wavelengths into a single fiber to transmit to a destination.

55. (New) The system as in claim 54, further comprising a receiver terminal which comprises:

an optical receiving element to separate the plurality of the optical signals of different sub-wavelengths received from the signal fiber at the destination into separate optical signals at the different sub-wavelengths;

a plurality of optical receivers each tunable in wavelength to receive the separate optical signals, respectively, and to produce electrical output signals representing the separated optical signals, respectively; and

a unit to combine the electrical output signals into an output signal at the high data rate.

56. (New) A communication system, comprising:

a signal demultiplexer to separate an input signal at a high date rate into a plurality of signals each at a low data rate, wherein the plurality of signals carry different split portions of information carried in the input signal;

a single optical transmitter to produce an optical carrier beam;

an optical modulator to modulate the optical carrier beam, response to the plurality signals, to produce a plurality of optical subcarriers at different optical sub-wavelengths that

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carry the different split portions of the information, respectively, wherein the plurality of sub-wavelengths are spaced sufficiently close in wavelength to provide a spectral efficiency of all the sub-wavelengths of the plurality of subwavelengths that is close to or greater than a spectral efficiency of the optical input; and

an optical element to couple the plurality of the optical signals of different sub-wavelengths into a single fiber to transmit to a destination.